DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) **8 Nov 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Fujitsu FLASHWAVE 4500 with Software Release 11.1.1

References: (a) Department of Defense Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) Department of Defense Instruction 8100.04, "DoD Unified Capabilities (UC)," 9 December 2010
(c) through (i), see Enclosure

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification of Unified Capabilities products.

2. The Fujitsu FLASHWAVE 4500, with Software Release 11.1.1, is hereinafter referred to as the System Under Test (SUT). The SUT was originally certified for joint use in the Defense Information Systems Network (DISN) as a F-NE. JITC conducted testing using F-NE requirements within the Unified Capabilities Requirements (UCR) 2008, Change 1, Reference (c), and other sponsor requested requirements. The vendor submitted Desktop Review (DTR) 1, 2, 3, and 4 to address certifying additional products through similarity and to update the software release. DTR 1 included seven additional components, DTR 2 updated the Software Release to 11.1.1, and DTR 4 included five additional components. The vendor submitted DTR 5 to include two components similar to others addressed in the original certification. No other configurations, features, or functions, except those cited within this memorandum, are certified by JITC. The JITC will verify the SUT's certification status during operational deployment and evaluate any new discrepancy noted in the operational environment for impact on the existing certification. These discrepancies will be adjudicated to the satisfaction of Defense Information Systems Agency (DISA) via a vendor Plan of Actions and Milestones that addresses all new critical Test Discrepancy Reports (TDRs) within 120 days of identification. This certification expires on 30 March 2014 or upon changes that could affect interoperability.

3. JITC approves the extension of this certification for DTR 5, submitted to include two components. JITC determined the two components have the same exact functionality as previously tested and approved components in Software Release 11.1.1. JITC determined, through analysis, that there is minimal risk in approving this DTR. The addition of the components did not change the information assurance posture. The certification authority approval of the additional products was granted on 13 September 2012. The results of the tests for these products are published in separate IA reports by Unified Capabilities Certification

Office (UCCO) Tracking Number (see paragraph 6) and can be found on the Approved Products List Integrated Tracking System (APLITS) at https://aplits.disa.mil.

4. Table 1 shows the SUT Interface Interoperability Status and Table 2 shows the Capability and Functional Requirements used to evaluate the interoperability of the SUT. Table 3 lists the additional components added via this DTR.

Table 1. SUT Interface Interoperability Status

Interface		Critical (See note)	Reference (UCR 2008, Change 1)	Threshold CR/FR	Status	Remarks
NE	Analog	No	5.9.2.3.1	1, 2, and 4	NA	Not supported by the SUT.
	Serial	No	5.9.2.3.2	1, 2, and 4	NA	Not supported by the SUT.
	BRI ISDN	No	5.9.2.3.3	1, 2, and 4	NA	Not supported by the SUT.
	DS1	No	5.9.2.3.4	1, 2, 3, and 4	Certified	SUT met requirements for specified interfaces.
	E1	No	5.9.2.3.5	1, 2, 3, and 4	NA	Not supported by the SUT.
	DS3	No	5.9.2.3.6	1, 2, 3, and 4	Certified	SUT met requirements for specified interfaces.
	OC-X	No	5.9.2.3.8	1, 2, 3, and 4	Certified	SUT met requirements for the following interfaces: OC-3/3C, 12/12C- 48/48C STM-16; OC-192/STM-64.
	IP (Ethernet) 10/100/1000	No	5.9.2.3.9	1, 2, 4, and 7	Certified	SUT met requirements for specified interfaces
NM	10Base-X	Yes	5.3.2.4.4	8	Certified	SUT met NM requirements for specified interfaces
	100Base-X	Yes	5.3.2.4.4	8	Certified	

NOTE: UCR does not specify any minimum interfaces. The SUT must minimally provide one of the listed ingress and egress interfaces specified.

LEGEND:

10Base-X	10 Mbps Ethernet generic designation	ISDN	Integrated Services Digital Network
100Base-X	100 Mbps Ethernet generic designation	Mbps	Megabits per second
BRI	Basic Rate Interface	NA	Not Applicable
CR	Capability Requirement	NE	Network Element
DS1	Digital Signal Level 1 (1.544 Mbps)	NM	Network Management
DS3	Digital Signal Level 3 (44.736 Mbps)	OC-X	Optical Carrier - X (OC-3, OC-12, etc.)
E1	European Interface Standard (2.048 Mbps)	STM	Synchronous Transport Module
FR	Functional Requirement	SUT	System Under Test
GbE	Gigabit Ethernet	UCR	Unified Capabilities Requirements
IP	Internet Protocol		

Table 2. SUT CRs and FRs Status

CR/ FR ID	Capability/Function	Applicability (See notes 1 and 2.)	Reference (UCR 2008, Change 1)	Status	Remarks
F-NE CR/FR					
1	**General NE Requirements**				
	General Requirements	Required	5.9.2.1	Met	
	Alarms	Required	5.9.2.1.1	Met	
	Congestion Control & Latency	Required	5.9.2.1.2	Met	
2	**Compression**				
	G.726	Conditional	5.9.2.2	NA	Not supported by the SUT.
	G.728	Conditional	5.9.2.2	NA	Not supported by the SUT.
	G.729	Conditional	5.9.2.2	NA	Not supported by the SUT.
3	**Interface Requirements**				
	Timing	Required	5.9.2.3.7	Met	
4	**Device Management**				
	Management Options	Required	5.9.2.4.1	Met	
	Fault Management	Conditional	5.9.2.4.2	Met	
	Loop-Back Capability	Conditional	5.9.2.4.3	Met	
	Operational Configuration Restoral	Required	5.9.2.4.4	Met	
5	**DLoS**				
	DLoS Transport	Conditional	5.9.2.4.5	NA	Not supported by the SUT.
6	**IPv6 Requirements**				
	Product Requirements	Required	5.3.5.4	Met	SUT is a Layer-2 device and transports IPv4 and IPv6 traffic transparently.
7	**NM Requirements**				
	VVoIP NMS Interface Requirements	Required	5.3.2.4.4	Met	
	General Management Requirements	Required	5.3.2.17.2	Met	
Other Tested Requirements					
8	**AGF Requirements**				
	AGF SONET Interface Requirements	Required	5.5.3.4.2	Partially Met	Certified based on sponsor requirements. See note 3.
	AGF SDH Interface Requirements	Required	5.5.3.4.3	Not Met	See note 4.
	AGF Electrical Interface Requirements	Required	5.5.3.4.4	Partially Met	Certified based on sponsor requirements. See note 5.
	AGF Ethernet Interface Requirements	Required	5.5.3.4.5	Partially Met	Certified based on sponsor requirements. See note 6.
	AGF SAN Interface Requirements	Required	5.5.3.4.6	Met	Certified based on sponsor requirements.
	AGF Cross-Connect Requirements	Required	5.5.3.4.7	Partially Met	Certified based on sponsor requirements. See note 7.
	AGF Interface Performance Requirements	Required	5.5.3.4.8	Met	Certified based on sponsor requirements.
	AGF Redundancy Requirements	Required	5.5.3.4.9	Partially Met	Certified based on sponsor requirements. See note 8.
	AGF General Protection Requirements	Required	5.5.3.4.10	Met	Certified based on sponsor requirements.
	AGF Interoperability Requirements	Required	5.5.3.4.11	Met	Certified based on sponsor requirements.
	AGF Fault Management Requirements	Required	5.5.3.4.12	Met	Certified based on sponsor requirements.
	AGF Performance Monitoring Requirements	Required	5.5.3.4.13	Partially Met	Certified based on sponsor requirements. See note 9.
	AGF Functional Device Requirements	Required	5.5.3.4.14	Partially Met	Certified based on sponsor requirements. See note 10.
	AGF Functional Device Interface Performance Requirements	Required	5.5.3.4.15	Met	Certified based on sponsor requirements.

Table 2. SUT CRs and FRs Status (continued)

CR/FR ID	Capability/Function	Applicability (See notes 1 and 2.)	Reference (UCR 2008, Change 1)	Status	Remarks
Other Tested Requirements (continued)					
8 (Cont)	**AGF Requirements**				
	AGF Functional Device EMS Requirements	Required	5.5.3.4.16	Partially Met	Certified based on sponsor requirements. See note 11.
	AGF Physical Design Requirements	Required	5.5.3.4.17	Partially Met	Certified based on sponsor requirements. See note 12.
	AGF Standards Compliance Requirements	Required	5.5.3.4.18	Partially Met	Certified based on sponsor requirements. See note 13.

NOTES:
1. Applicability refers to the high-level roll-up of section requirements. A detailed listing of individual requirements applicability is provided in Enclosure 3.
2. The sponsor requested the SUT be assessed as an AGF device against UCR 2008, Section 5.5.
3. The SUT does not support the following: OC-3 SFP, OC-12 SFP, OC-48 SFP, OC-192 XFP: IR-1, IR-2, LR-1, LR-2, LR-3, and MM.
4. The SUT does not support SDH.
5. The SUT does not support FDL Status Messages.
6. The SUT does not support Transparent VLAN Tagging.
7. The SUT SONET Cross Connect fabric supports only 300 Gbps instead of the required 320 Gbps. The SUT Ethernet Switch fabric does not support the required 20 G of IP Switch fabric.
8. The SUT does not support 1:1 redundancy for DS3.
9. The SUT does not support PM capability on all the supported interfaces.
10. The SUT DS1/E1 Line Terminations does not provide both DS1/E1 Terminal and Service Loop-Back Capabilities.
11. The SUT EMS does not report Physical Layer (Layer 1) Statistics. The SUT is not able to Provision Circuit Using Different Types Of Cross-Connects.
12. The SUT complies up to 13,000 feet according to the vendor's letter of compliance.
13. The SUT did not meet the following: the IEEE Standards for LAN and MANs, Virtual Bridged LANs, IEEE 802.1Q-2003, X3-230, ANSI INCITS 374-2003, Information FC-SB-3 and ANSI INCITS 230:1994, Information Technology Fiber Channel Physical and Signaling Interface.

LEGEND:

ADPCM	Adaptive Differential Pulse Code Modulation	IPv4	Internet Protocol version 4
AGF	Aggregation Grooming Function	IPv6	Internet Protocol version 6
ANSI	American National Standards Institute	IR	Intermediate Reach
CR	Capability Requirement	Kbps	Kilobits per second
CS-ACELP	Conjugate Structure Algebraic Code-Excited Linear Prediction	LAN	Local Area Network
		LD-CELP	Low Delay-Code Excited Linear Prediction
DLoS	Direct Line of Sight	LR	Long Reach
DS	Digital Signal	MAN	Metropolitan Area Network
E1	European Interface Standard (2.048 Mbps)	MM	Multiplexor Module
EMS	Element Management System	NA	Not Applicable
F-NE	Fixed Network Element	NE	Network Element
FC-SB-S3	Fiber Channel- Single-Byte Command Code Sets Mapping Protocol 3	NM	Network Management
		NMS	Network Management System
FDL	Fiber Delay Line	OC	Optical Carrier
FR	Functional Requirement	OTS	Optical Transport System
G	Gigabit	PM	Power Management
G.726	ITU-T speech codec for ADPCM (32 Kbps)	SAN	Storage Area Network
G.728	ITU-T speech codec for LD-CELP (16 Kbps)	SDH	Secure Digital Host
G.729	ITU-T speech codec for CS-ACELP (8 Kbps)	SFP	Small Form Factor
Gbps	Gigabits per second	SONET	Synchronous Optical Network
ID	Identification	SUT	System Under Test
IEEE	Institute of Electrical and Electronics Engineers	UCR	Unified Capabilities Requirements
INCITS	International Committee for Information Technology Standards	VLAN	Virtual Local Area Network
		VVoIP	Voice and Video over Internet Protocol
IP	Internet Protocol	XFP	Small Form Factor

Table 3. List of DTR 5 Equipment to be included in the Original Certification

DTR 5 - New Components Part Number	Description	Comparable Approved Components Part Number
FC9580C9C2	OC-192, 1550NM Wideband, LR, SC, SMF/MMF	FC9580G9C1
FC9580L9C2	OC-192, 1550NM Wideband, LR, SC, SMF/MMF	

LEGEND:

DTR	Desktop Review	OC-192	Optical Carrier 192
LR	Long Reach	SC	Single Channel
MMF	Multi-Mode Fiber	SMF	Single Mode Fiber
NM	nanometer		

5. In accordance with the Program Manager's request, JITC did not develop a detailed test report. JITC distributes interoperability information via the JITC Electronic Report Distribution system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program, which .mil/.gov users can access on the NIPRNet at https://stp.fhu.disa.mil. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool at http://jit.fhu.disa.mil (NIPRNet). Information related to Approved Products List (APL) testing is available on the DISA APL Testing and Certification website located at http://www.disa.mil/Services/Network-Services/UCCO. All associated test information is available on the DISA Unified Capability Certification Office APL Integrated Tracking System (APLITS) website located at https://aplits.disa.mil.

6. JITC testing point of contact is Mr. Son Pham, commercial (301) 743-4258. His e-mail address is Son.m.Pham2.civ@mail.mil: mailing address: 3341 Strauss Avenue, Suite 236, Indian Head, Maryland 20640-5149. The Tracking Number for the SUT is 0928102.

FOR THE COMMANDER:

for

Enclosure a/s

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ADDITIONAL REFERENCES

(c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008 Change 1," January 2010
(d) Fujitsu Desk Top Review (DTR)-4 Reference Document, "Fujitsu Flashwave 4500 R11.1 TN 0928102 DTR-5," 27 August 2012
(e) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Fujitsu Network Communications, Inc. FLASHWAVE 4500 Fixed Network Element (F-NE), Software Release 11.1, (TN0928102)," 3 December 2010